

### **AMENDMENTS TO THE CLAIMS**

Please cancel claims 1-17 and previously presented claim 26, amend claims 18-20, and add new claims 26-31. No new matter is believed to be introduced by the aforementioned amendments and new claims. The following listing of claims will replace all prior versions and listings of claims in the application.

1. – 17.           **(Canceled)**

18.   **(Currently amended)** ~~An active layer in a~~ A semiconductor laser comprising:

an active layer that includes at least one quantum well, the at least one quantum well including semiconductor alloy layers under mechanical stress and stabilizing material layers, wherein the stabilizing material layers are interspersed between the semiconductor alloy layers and serve as mechanical stabilizers for the semiconductor alloy layers;  
    barrier layers sandwiching the active layer; and  
    mirror layers disposed outside of the barrier layers.

19.   **(Currently amended)** The invention of claim 18, wherein the semiconductor laser is one of a vertical cavity surface emitting laser, an edge emitting laser, or a light emitting diode.

20.   **(Currently Amended)** The invention of claim 18, wherein the semiconductor alloy layers are comprised of one of InGaAs, GaAsSb, or InGaAsSb, and the substrate is comprised of GaAs.

21.   **(Previously Presented)** The invention of claim 20, wherein the mirror layers are comprised of AlGaAs.

22.   **(Previously Presented)** The invention of claim 21, wherein the quantum wells are about 80Å - 250Å thick.

23.   **(Previously Presented)** The invention of claim 21, wherein the quantum well mechanical stabilizer layers are about 9.5Å - 11.2Å thick.

24.   **(Previously Presented)** The invention of claim 21, wherein the alloy layers are about 24Å thick.

26.     **(Canceled)**
26.     **(New)** The invention of claim 18, wherein the stabilizing layers are substantially unstrained.
27.     **(New)** A semiconductor laser, comprising:  
          a substrate; and  
          an active layer disposed above the substrate and comprising:  
              at least one quantum well that includes within it:  
                    semiconductor alloy layers under mechanical stress; and  
                    stabilizing material layers that are arranged in alternating fashion with  
                    the semiconductor alloy layers, the stabilizing layers serving as mechanical  
                    stabilizers for the semiconductor alloy layers;  
          barrier layers sandwiching the active layer; and  
          mirror layers disposed outside of the barrier layers.
28.     **(New)** The semiconductor laser as recited in claim 27, wherein the stabilizing layers are substantially lattice matched with the substrate.
29.     **(New)** The semiconductor laser as recited in claim 27, wherein the semiconductor laser comprises one of: a vertical cavity surface emitting laser; an edge emitting laser; or a light emitting diode.
30.     **(New)** The semiconductor laser as recited in claim 27, wherein the semiconductor alloy layers are comprised of one of InGaAs, GaAsSb, or InGaAsSb, and the substrate is comprised of GaAs.
31.     **(New)** The semiconductor laser as recited in claim 27, wherein the stabilizing layers are substantially unstrained.